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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): **Daniel E. Resasco, Walter E. Alvarez, Jose E. Herrera and Leandro Balzano**

Serial No.: **Not Yet Assigned** **Art Unit: 1754**

Filed: **Herewith** **Examiner: Unknown**

For: METHOD FOR PRODUCING SINGLE WALLED CARBON NANOTUBES

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

1. [X] Preliminary Statements

2. [X] Form PTO-1449 (Modified)

3. [X] Statements as to Information Not Found in Patents or Publications (Information not listed in PTO 1449 (Modified))

4. [X] Identification of Prior Application In Which Listed Information Was Already Cited and for Which No Copies Are Submitted Or Need to Be Submitted

5. [x] Copies of Listed Information Items Accompanying this Statement.

6. [X] Identification of Person(s) Making this Information Disclosure Statement

Section 1. Preliminary Statements

Applicant submits herewith patents, publications or other information of which he is aware, which he believes may be material to the examination of this application and in respect of which there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Section 2. Form PTO-1449 (Modified)

[X] A completed Form 1449 (Modified) is attached hereto (without copies of cited references).

[ ] No Form 1449 (Modified) is attached.

Section 3. Statements as to Information Not Found in Patents or Publications (Information not listed in PTO 1449 (Modified))

Section 4. Identification of Prior Application In Which Listed Information Was Already Cited and for Which No Copies Are Submitted Or Need Be Submitted

This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior application Serial No. 10/118,834, filed on April 8, 2002 (date).

The references were submitted to, and/or cited by, the Office in the prior application(s) are not required to be provided in this application;

Section 5. Copies of Listed Information Items Accompanying this Statement

Legible copies of all items listed in Form PTO-1449 (Modified) accompany this information disclosure statement.

[X] Exception(s) to above:

[X] Items in prior application from which an earlier filing date is claimed for this application, as identified in Section 4.

Section 6. Identification of Person(s) Making this INFORMATION DISCLOSURE STATEMENT

The person making this statement is the attorney who signs below on the basis of the information:

[ ] supplied by the inventor(s)

[ ] supplied by an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c)).

[X] in the attorney's file

Respectfully submitted,

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FORM PTO-1449 (Fill-A-Form 7.92)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

Attorney's Docket Number	Serial Number
5820.640	Not Yet Assigned
Applicant: Daniel E. Resasco, et al.	
Filing Date: Herewith	Group: Unknown

U. S. PATENT DOCUMENTS

EXAM INIT.		DOCUMENT NUMBER							DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	3	7	4	6	6	5	7	07/17/1973	Miller et al.	252	437	
	AB	4	4	5	6	6	9	4	06/26/1984	Blaskie et al.	502	74	
	AC	4	5	7	4	1	2	0	03/04/1986	Thompson	502	220	
	AD	4	6	6	3	2	3	0	05/05/1987	Tennent	428	367	
	AE	5	1	6	5	9	0	9	11/24/1992	Tennent et al.	423	447	
	AF	5	2	2	7	0	3	8	07/13/1993	Smalley et al.	204	173	
	AG	5	3	0	0	2	0	3	04/05/1994	Smalley	204	157	
	AH	5	4	0	5	9	9	6	04/11/1995	Suzuki et al.	562	548	
	AI	5	4	8	2	6	0	1	01/09/1996	Ohshima et al.	204	173	
	AJ	5	5	4	3	3	7	8	08/06/1996	Wang	502	174	
	AK	5	5	5	6	5	1	7	09/17/1996	Smalley	204	157	
	AL	5	5	6	0	8	9	8	10/01/1996	Uchida et al.	423	461	
	AM	5	5	7	8	5	4	3	11/26/1996	Tennent et al.	502	180	
	AN	5	5	8	7	1	4	1	12/24/1996	Ohshima et al.	423	461	
	AO	5	5	9	1	3	1	2	01/07/1997	Smalley	204	157	
	AP	5	6	0	3	9	0	7	02/18/1997	Grochowski	423	210	
	AQ	5	6	4	8	0	5	6	07/15/1997	Tanaka	423	445	
	AR	5	6	4	1	4	6	6	06/24/1997	Ebbesen et al.	423	447	
	AS	5	6	9	5	7	3	4	12/09/1997	Ikazaki et al.	423	461	
	AT	5	6	9	8	1	7	5	12/16/1997	Hiura et al.	423	447	
	AU	5	7	0	7	9	1	6	01/13/1998	Snyder et al.	502	416	
	AV	5	7	4	4	2	3	5	04/28/1998	Creehan	428	364	
	AW	5	7	5	3	0	0	8	05/19/1998	Olk	204	173	
	AX	5	7	7	3	8	3	4	06/30/1998	Yammamoto et al.	204	192	
	AY	5	7	8	0	1	0	1	07/14/1998	Nolan et al.	427	216	
	AZ	5	8	1	4	2	9	0	09/29/1998	Niu et al.	423	344	

U. S. PATENT DOCUMENTS

EXAM INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AZA	5 8 7 7 1 1 0	03/02/1999	Snyder et al.	502	180	
	AZB	5 9 6 5 2 6 7	10/12/1999	Nolan et al.	428	408	
	AZC	5 9 8 5 2 3 2	11/16/1999	Howard et al.	423	447	
	AZD	5 9 9 7 8 2 3	12/07/1999	Lieber et al.	423	249	

FOREIGN PATENT DOCUMENTS

EXAM INIT.		Office DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO
	BA	PCT/US00/15362		International Search Report				
	BB	PCT/US02/23155	07/21/2003	International Search Report				
	BC	WO 00/73205	12/07/2000	PCT/US				
	BD	WO 97/09272	03/13/1997	PCT/US			X	
	BE	WO 98/392550	09/11/1998	PCT/US			X	
	BF	WO 98/42620	10/01/1998	PCT/JP				X
	BG	406122489	05/1994	Japan			X	
	BH	WO 00/17102	03/30/2000	PCT International Publication				

NON PATENT DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published

EXAM INIT.		
	CA	Alvarez et al., "Synergism of Co and Mo in the atalytic production of single-wall carbon nanotubes by decomposition of CO", *Elsevier Science Ltd.*, Carbon 39 (2001), pp. 547-558.
	CB	Bandow et al., "Effect of the Growth Temperature on the Diameter Distribution and Chirality of Single-Wall Carbon Nanotubes", *The American Physical Society*, Physical Review Letters, Vol. 80, No. 17, (1998), pp. 3779-3782.
	CC	Bethune et al., "Cobalt-Catalysed Growth of Carbon Nanotubes with Single-Atomic-Layer Walls," Nature, 363:605-607, Jun 1993.
	CD	V. Brotons et al., "Catalytic influence of bimetallic phases for the synthesis of single-walled carbon nanotubes", JOURNAL OF MOLECULAR CATALYSIS, A: Chemical 116 (1997) 397-403.

EXAM INIT.		NON PATENT DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	CE	Cassell et al., "Large Scale CVD Synthesis of Single-Walled Carbon Nanotubes", AMERICAN CHEMICAL SOCIETY, pp. 6483-6492, 1999.
	CF	Chaturvedi et al., "Properties of pure and sulfided NiMo04 and CoMo04 catalysts: TPR, XANES and time-resolved XRD studies", Database Accession No. EIX99044490981 XP002246342, Proceedings of the 1997 Mrs Fall Symposium, Boston, MA, USA, December 2-4, 1997; Mater Res Soc Symp Proc, Materials Research Society Symposium-Proceedings, Recent Advances in Catalytic Materials, 1998, Mrs. Warrendale, PA, USA.
	CG	Che et al., "Chemical Vapor Deposition Based Synthesis of Carbon Nanotubes and Nanofibers Using a Template Method", CHEMICAL MATER. 1998, 10, PP. 260-267.
	CH	Chen et al., "Growth of carbon nanotubes by catalytic decompositon of CH4 or CO on a Ni-MgO catalyst", CARBON VOL. 35, No. 10-11, pp. 1495-1501, 1997.
	CI	Cheng et al.;"Bulk Morphology and Diameter Distribution of Single-Walled Carbon Nanotubes Synthesized by Catalytic Decomposition of Hydrocarbons," Chemical Physics Letters, 289:602-610, 1998.
	CJ	Cheng et al.; "Large-Scale and Low-Cost Synthesis of Single-Walled Carbon Nanotubes by the Catalytic Pyrolysis of Hydrocarbons," Applied Physics Letters, 72(25):3282-3284, 06/25/98.
	CK	Dai et al.; "Single-Wall Nanotubes Produced By Metal-Catalyzed Disproportionation of Carbon Monoxide," Chemical Physics Letters, 260:471-475, 1996.
	CL	Database, Accession No. 1999-366878, Cano, "Canno KK", XP-002149235, 05/25/1999.
	CM	De Boer et al., "The cobalt-molybdenum interaction in CoMo/SiO2 catalysts: A CO-oxidation study", Elsevier Science Ltd., Solid State Ionics 63-65 (1993), pp. 736-742.
	CN	Fonseca et al., "Synthesis of single-and multi-wall carbon nanotubes over supported catalysts", APPLIED PHYSICS A, 67, PP. 11-22, 1998.
	CO	Govindaraj et al., "Carbon structures obtained by the disproportionation of carbon monoxide over nickel catalysts", MATERIALS RESEARCH BULLETIN, Vol. 33, No. 4, pp. 663-667, 1998.
	CP	Hafner et al., "Catalytic growth of single-wall carbon nanotubes from metal particles", CHEMICAL PHYSICS LETTERS, 296, PP 195-202, 1998.
	CQ	Hernadi et al., "Catalytic synthesis of carbon nanotubes using zeolite support", ELSEVIER SCIENCE INC. 1996.

EXAM INIT.		NON PATENT DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	CR	HYPERION CATALYSIS INTERNATIONAL Website; http://www.fibrils.com/esd.htm ;"Unique Slough Resistant SR™ Series ESD Thermoplastic Product Line Offers Reduced Particle Contamination For Demanding Electronic Applications," and Hyperion Homepage http://www.fibrils.com .
	CS	Iijima, Sumio; "Helical Microtubules of Graphitic Carbon," Nature, 354:56-58, Nov 1991.
	DA	Iijima et al.; "Single-Shell Carbon Nanotubes of 1-nm Diameter", Nature 363:603-605, Jun 1993.
	DB	Ivanov et al.; "The Study of Carbon Nanotubes Produced by Catalytic Method," Chemical Physics Lettersm 223:329-335, 1994.
	DC	Journet et al.; "Large-Scale Production of Single-Walled Carbon Nanotubes by the Electric-Arc Technique," Nature, 338:756-758, Aug 1997.
	DD	B. Kitiyanan et al., "Controlled production of single-wall carbon nanotubes by catalytic decomposition of CO on bimetallic Co-Mo catlaysts", CHEMICAL PHYSICS LETTERS, 317 (2000), pp. 497-503, 2/4/2000.
	DE	Krishnankutty et al.;"The Effect of Copper on the Structural Characteristics of Carbon Filaments Produced from Iron Catalyzed Decomposition of Ethylene," Catalysts Today, 37:295-307, 1997.
	DF	Li et al., "Large-Scale Synthesis of Aligned Carbon Nanotubes", SCIENCE, Vol. 274, pp. 1701-1703.
	DG	Rinzler et al.; "Large-Scale Purification of Single-Wall Carbon Nanotubes: Process, Product, and Characterization," Applied Physics A, 67:29-37, 1998.
	DH	Thess et al., "Crystalline Ropes of Metallic Carbon Nanotubes, SCIENCE, Vol. 273, pp. 483-487.
	DI	I. Willems et al., "Control of the outer diameter of thin carbon nanotubes synthesized by catalytic decomposition of hydrocarbons", CHEMICAL PHYSICS LETTERS, 317 (2000) pp. 71-76.
	DJ	Yakobson et al.; "Fullerene Nanotubes: $C_{1,000,000}$ and Beyond," American Scientist, 85:324-337, Jul-Aug 1997.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609: Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to the applicant.